Amendments to the Specification

Please replace the title (first page and abstract page) with the following title:

HIGH SPEED ~~QPSK~~ MONOLITHIC MICROWAVE INTEGRATED CIRCUIT (MMIC) QUADRATURE PHASE SHIFT KEYING (QPSK) AND QUADRATURE AMPLITUDE MODULATION (QAM) MODULATORS

Please replace paragraph **[008]** with the following amended paragraph:

[008] The symbols of [[a]] QPSK signals may also be conceptualized as two pairs of a bi-orthogonal set. Figure 3 shows a common implementation, using that concept, of QPSK modulator 300 employing orthogonal bi-phase shift keying (BPSK) modulators 310 and 320. The circuit of QPSK modulator 300 shown in Figure 3 uses double-balanced mixers for BPSK modulators 310 and 320. As seen in Figure 3, two-bit data word 302 is extracted from bit sequences 303 and 305. Bit sequence 303 and carrier 314 are input to BPSK modulator 310, which outputs BPSK modulated signal 316. Bit sequence 305 and carrier 324 are input to BPSK modulator 320, which outputs BPSK modulated signal 326. BPSK modulated signals 316 and 326 are added by summer 330 and output as QPSK modulated carrier 336 corresponding to a signal, S, of the form:

$$S(t)=A\cos(\omega_s t - \theta + \psi) \quad (2)$$

where A is the carrier amplitude constant and ψ is the phase constant. There are four possible values for two-bit data word 302 each of which is mapped to a distinct value of the phase angle θ. Because carriers 314 and [[316]] 324 differ in phase by 90 degrees, phase angle θ will take on one of four phase values separated by 90 degrees, as shown in Figure 2, with each of the four possible values of two-bit data word 302 represented by a symbol 202, which is a vector, s_1, s_2, s_3 or s_4, in the phase plane of phase diagram 200.